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| 10/653,962 | 09/04/2003 | Atsushi Nakamura | 00862.023209 | 4026 |

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| EXAMINER | |
|---|---|
| AYASH, MARWAN | |
| ART UNIT | PAPER NUMBER |
| 2185 | |

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| 10/09/2007 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/653,962 | NAKAMURA, ATSUSHI | |
| | Examiner | Art Unit | |
| | Marwan Ayash | 2185 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *20 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-7 and 12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7, 12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Amendment*

1. This office action has been issued in response to the amendment filed 9/20/07. Claims 1-7, 12 are pending in this application. Applicant's arguments have been carefully considered, but are not persuasive in view of the prior art as applied to a broadest reasonable interpretation of the claims and/or moot in view of new grounds of rejection. The examiner appreciates Applicant's effort to distinguish over the cited prior art by more distinctly claiming their invention, however, the claims do not fully overcome the prior art of record. The rejection of all previously rejected claims is maintained and clarification and/or elaboration with respect to why the claims are not in condition for allowance will hereafter be provided (and made distinct via italicizing and/or underlining) in order to efficiently further prosecution. Accordingly this action has been made FINAL.

### *Claim Objections*

2. **Claim 6 is objected to** because the recitation of "a unit that does not update... but updating the one..." is grammatically inconsistent; it appears that "but updating" should be "but updates" or "but does update". Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. **Claims 1-7, 12 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Leong et al. (US Patent # 2003/0182503) in view of Takamoto et al. (US Patent # 2001/0027486).

With respect to **independent claims 1, 2, 6, 12** Leong discloses: An information processing system/method/apparatus including

first and second devices [*client 175, storage system 105, disk array 115 or any combination thereof including elements 145, 150, 155 (Leong – Fig. 1)*];

wherein said first device comprises a transmission unit/means for transmitting one request which designates a plurality of data storage areas in said first device to said second device [*a client (or storage system 105) desiring to write to storage space in the storage system and/or disk array comprises transmission means operable to issue a volume write request (which will be broken up into a plurality of tasks/subtasks) which designate(s) storage areas perhaps within the client and/or storage system105 to be written to some (destination) storage space (Leong – Fig. 1, 3, 5, paragraphs 0057-0070). Storage system 105 working in conjunction with any of the managers and/or software modules in memory 125 is operable to execute this request by interacting with a plurality of storage devices such as those in disk array 115 (Leong – abstract, Fig. 1, paragraph 0020)*];

wherein said second device comprises completion notifying means for notifying said first device of completion of a data communication for one of the plurality of data storage areas in said first device

[*as I/O tasks complete, the system issues messages/notifications to ensure efficient forward progress in terms of executing data access requests (Leong –abstract, paragraph 0050-0052, 0065-0066, 0069)*];

wherein said first device further comprises update means for not updating the one of the plurality of data storage areas for which the data communication has not been completed but updating the one of the plurality of data storage areas for which the data communication has been completed, in accordance with the notification of completion of the data communication for one of the plurality of data storage areas [*Leong's invention (including first and second devices) comprises update means to update storage areas for which there are no outstanding (completion notification not yet received) subordinate I/O tasks, and for not updating (via conditional task suspension) storage areas for which outstanding (completion notification not received) I/O task(s) exist or is/are in the process of completing (Leong – Fig. 4, 5)*].

Leong does not **explicitly** disclose (hardware) devices comprising completion notifying (hardware) means for notifying each other of the completion of (data access) requests, but rather discloses his invention more so in the context of tasks notifying other tasks of the completion of data access requests. It is understood that the tasks are operating via the underlying hardware devices such that the limitation in question is understood to be at least implicitly taught or strongly suggested by the cited disclosure of Leong. Accordingly, it is noted that one of ordinary skill may understand Leong's disclosure to anticipate the instant claims.

Nevertheless, in the same field of endeavor Takamoto teaches a communication system wherein hardware devices (first and second) operate in a send/acknowledge environment where packets are divided and transmitted in parts, upon the reception of which, a second device will utilize its completion notifying (hardware) means to notify a first device of completion of a data communication (*Takamoto – abstract, Fig. 4; see also Fig. 5-6 for prior art approaches*).

Therefore Leong in view of Takamoto disclose all limitations of the instant claim(s).

It would have been obvious to one having ordinary skill in the art at the time of the invention to allow hardware devices to notify each other as opposed to software constructs/mechanisms doing the same because this would be advantageous in terms of implementation flexibility (*Leong - 0035*) and moreover would have been within the purview of the artisan since it is known in the art that hardware and software are logically equivalent. Therefore it is understood that the tasks, and their underlying hardware perform the functionality of the claimed completion notifying means since although the instant claim limitation is directed toward hardware means for notifying a (hardware) device of completion of a data communication, the operations to be performed by the (hardware) means correspond to the operations performed by the tasks and/or underlying hardware supporting the tasks (as disclosed by Leong), and one of ordinary skill in the art would realize that a (software) task performing a set of operations would read upon a hardware element performing those same set of operations.

With respect to **dependent claim 3** as applied to claim 2 above Leong discloses the two devices are connected via a communication control bus complying with IEEEI394 [***The examiner is taking official notice*** *that connecting to storage via IEEE 1394 would have been obvious to one having ordinary skill in the art at the time of the invention. Implementing this feature in the invention of Leong would have been obvious to one having ordinary skill in the art because connecting to external storage via IEEE 1394 is old and well known in the art (as evidenced by Palatov US PGPub # 2001/0029583 - page 8 paragraph 0098, page 14 paragraph 0164), and one of ordinary skill would be motivated to connect to external storage via IEEE1394 because an IEEE1394 interface is a known serial high speed interface for storage devices, and also because Leong suggests this limitation by disclosing coupling storage disks to a storage system over an I/O interconnect arrangement, such as a conventional high-performance, Fibre Channel serial link (Leong – paragraph 0037)*].

With respect to **dependent claims 4, 7** as applied to claims 2, 6 above Leong discloses transmitting a request block [*Leong – paragraph 0046*] which contains a plurality of pieces of

identification information respectively indicating the plurality of data storage areas, and commands respectively for the plurality of data storage areas [*an exemplary I/O task includes eight parameters, which include identification information respectively indicating the plurality of data storage areas, and commands respectively for the plurality of data storage areas (Leong – paragraph 0047 - 0049)*].

With respect to **dependent claim 5** as applied to claim 2 above Leong discloses writing data on the data storage area designated by the request or reading data from the data storage area designated by the request [*Leong – paragraph 0020*].

***Response to Arguments***

Applicant's arguments filed 9/20/07 have been fully considered but are not persuasive in view of the prior art and/or moot in view of new ground(s) of rejection necessitated by amendment to the claims. The rejection of all claims previously rejected in the first Office Action is maintained. Please note that any rejections/objection not maintained from the first Office Action have been rectified either by applicant's amendment and/or persuasive argument(s).

Applicants request for confirmation that all certified copies have been received is acknowledged, and form PTO-326 now correctly indicates that ALL of the certified copies filed 10/23/03 have been received.

**1ST ARGUMENT:**

With respect to applicant's argument regarding the rejection of claims 1, 2, 6, 12 on page 9, in the first-third paragraphs, essentially that Leong does not teach the amended limitation [*It is the examiner's position that according to a broadest reasonable interpretation of the claim language, Leong in view of Takamoto teaches the limitation referenced by the instant argument as indicated in the new ground(s) of rejection necessitated by amendment to the instant claim(s)*].

**2ND ARGUMENT:**

With respect to applicant's argument regarding the rejection of claim 3 on page 9, in the fourth-fifth paragraphs, essentially that "the taking of Official Notice is respectfully traversed in the absence of a cited reference", and that "there has been no showing of any indication of motivation in the cited document" [*The examiner maintains that both a cited reference (Pavlov) and sufficient motivation have been provided in the official notice statement, therefore this allegation is not persuasive*].

**3RD ARGUMENT:**

With respect to applicant's argument regarding the rejection of all dependent claims on page 9 [*As this argument is dependent on one or more non-persuasive arguments addressed above, it is understood to be non-persuasive on dependency merits. All dependent claims remain rejected*].

*Conclusion*

When responding to the office action, applicants are advised to clearly point out the patentable novelty which they think the claims present in view of the state of the art disclosed by the references cited or the objections made. Applicants must also show how the amendments avoid such references or objections. See 37 C.F.R. 1.111(c). In addition, applicants are advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist examiner in locating the appropriate paragraphs. **Any new claims and/or limitations should be accompanied by a reference as to where the new claims and/or limitations are supported in the original disclosure.**

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action

is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

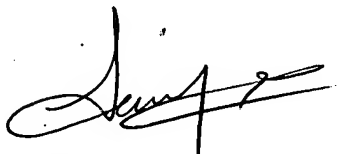
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marwan Ayash whose telephone number is 571-270-1179. The examiner can normally be reached on Mon-Fri 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sanjiv Shah can be reached on (571)272-4098. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Marwan Ayash - Examiner - Art Unit 2185

9/25/07



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